IN THE CLAIMS

1. (Currently amended) A spreading system comprising:

a first spreader configured and arranged to produce a first spread signal based on a first data signal and a first pseudonoise sequence, wherein the width of the first spread signal is one bit;

a second spreader configured and arranged to produce a second spread signal based on a second data signal and the first pseudonoise sequence, wherein the width of the second spread signal is one bit;

a first filter configured and arranged to produce a first filtered signal based on the first spread signal;

a second filter configured and arranged to produce a second filtered signal based on the second spread signal;

a first gain element configured and arranged to produce a first controlled signal based on the first filtered signal;

a second gain element configured and arranged to produce a second controlled signal based on the second filtered signal; and

an adder configured and arranged to produce a digital sum signal based on the first controlled signal and the second controlled signal ~~filtered signal and the second spread signal~~.

2. (Currently amended) The spreading system according to claim 1, wherein the widths of the filtered signals are ~~is~~ greater than one bit.

3. Canceled

4. Canceled

5. Canceled

6. (Original) The spreading system according to claim 1, wherein the first spreader includes an exclusive-or gate.

7. Canceled

8. (Currently amended) The spreading system according to claim ~~7~~ 1, wherein the first gain element includes a multiplier.

9. Canceled

10. Canceled

11. Canceled

12. Canceled

13. Canceled

14. (Currently amended) The spreading system according to claim 1, wherein the first filter comprises a lowpass filter having a cutoff frequency substantially equal to one-half of a bit rate of the first spread signal.

15. (Currently amended) The spreading system according to claim 1, further comprising:

a third spreader configured and arranged to produce a third spread signal based on the first data signal and a second pseudonoise sequence, wherein the width of the third spread signal is one bit;

a fourth spreader configured and arranged to produce a fourth spread signal based on the second data signal and the second pseudonoise sequence, wherein the width of the fourth spread signal is one bit;

a third filter configured and arranged to produce a third filtered signal based on the third spread signal;

a fourth filter configured and arranged to produce a fourth filtered signal based on the fourth spread signal;

a third gain element configured and arranged to produce a third controlled signal based on the third filtered signal;

a fourth gain element configured and arranged to produce a fourth controlled signal based on the fourth filtered signal; and

a second adder configured and arranged to produce a digital sum signal based on the third and fourth ~~spread~~ controlled signals.

16. (Currently amended) The spreading system according to claim 15, wherein the widths of the third and fourth filtered signals are ~~is~~ greater than one bit~~, and~~

~~wherein the width of the first spread signal is one bit~~.

17. Canceled

18. Canceled

19. Canceled

20. (Currently amended) A method of digital signal processing, the method comprising:

spreading a first data signal with a first pseudonoise sequence to obtain a first spread signal having a width of one bit;

spreading a second data signal with the first pseudonoise sequence to obtain a second spread signal having a width of one bit;

filtering the first spread signal to obtain a first filtered signal;

filtering the second spread signal to obtain a second filtered signal;

multiplying the first filtered signal by a first gain factor to obtain a first controlled signal;

multiplying the second filtered signal by a second gain factor to obtain a second controlled signal; and

adding ~~a signal based on the filtered~~ the first controlled signal and ~~a signal based on the second spread~~ the second controlled signal to obtain a digital sum signal.

21. Canceled

22. (Currently amended) The method of digital signal processing according to claim 20, wherein the widths of the filtered signals are ~~is~~ greater than one bit.

23. Canceled

24. (Currently amended) The method of digital signal processing according to claim 20, wherein the spreading ~~a~~ the first data signal comprises performing an exclusive-OR operation having the first data signal and ~~a~~ the first pseudonoise sequence as inputs and having the first spread signal as an output.

25. Canceled

26. Canceled

27. (Currently amended) The method of digital signal processing according to claim 20, the method further comprising:
spreading the first data signal with a second pseudonoise sequence to obtain a third spread signal having a width of one bit;
spreading the second data signal with the second pseudonoise sequence to obtain a fourth spread signal having a width of one bit;
filtering the third spread signal to obtain a third filtered signal;
filtering the fourth spread signal to obtain a fourth filtered signal;
multiplying the third filtered signal by a third gain factor to obtain a third controlled signal;
multiplying the fourth filtered signal by a fourth gain factor to obtain a fourth controlled signal; and
adding ~~a signal based on the~~ third ~~spread~~ controlled signal and ~~a signal based on~~ the fourth ~~spread~~ controlled signal to obtain a second digital sum signal.

28. Canceled